AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1.   **(Currently Amended)**   A diagnostic module comprising:

a bus interface configured to exchange data with a computer system bus;

one or more programmable logic modules, each programmable logic module configured to process first bit files that cause the programmable logic module and at least one communicatively coupled port to interoperate to implement a first one of a plurality of different network diagnostic functions, each programmable logic module including a clock configured to coordinate the transfer of data between the programmable logic module and the at least one communicatively coupled port and wherein each programmable logic module is further configured to process second bit files that cause the programmable logic module and at least one communicatively coupled port to interoperate to implement a second one of the plurality of different network diagnostic functions, wherein the second one of the plurality of network diagnostic functions is different from the first one of the plurality of different network diagnostic functions, the first and second one of the plurality of different network diagnostic functions being selected from among at least a network analyzer, a jammer, a generator, and a bit error rate tester;

one or more ports, each port communicatively coupled to one of the one or more programmable logic modules, each port being network connectable to a network; and

a control module communicatively coupled to the bus interface and communicatively coupled to each of the one or more programmable logic modules, the

control module configured to coordinate the transfer of data between the bus interface and the one or more programmable logic modules.

2. **(Previously Presented)**   The diagnostic module as recited in claim 1, wherein the bus interface comprises a PCI bus interface.

3. **(Previously Presented)**   The diagnostic module as recited in claim 1, wherein the one or more programmable logic modules comprise one or more FPGAs.

4. **(Previously Presented)**   The diagnostic module as recited in claim 3, wherein the one or more FPGAs comprise circuitry that, in response to receiving appropriate instructions, can implement any of the plurality of different network diagnostic functions.

5. **(Cancelled)**

6. **(Previously Presented)**   The diagnostic module as recited in claim 1, wherein the one or more ports comprise at least one port configured to receive a small form factor pluggable connector.

7. **(Previously Presented)**   The diagnostic module as recited in claim 1, wherein the one or more ports comprise at least one port configured to receive a 10 Gigabit small form factor pluggable.

8. **(Cancelled)**

9. **(Previously Presented)**   The diagnostic module as recited in claim 1, wherein the control module comprises a control module configured to proeess address information that identifies a programmable logic module from among the one or more programmable logic modules.

10.   **(Previously Presented)**   The diagnostic module as recited in claim 1, further comprising:

one or more memory modules, each memory module communicatively coupled to a corresponding programmable logic module, each memory module configured to store data for a corresponding programmable logic module.

11.   **(Previously Presented)**   The diagnostic module as recited in claim 1, wherein the software configurable network diagnostic module comprises a printed circuit board.

12.   **(Previously Presented)**   A chassis computer system comprising:

one or more bus interface receptacles, each bus interface receptacle configured to receive a bus interface portion of a diagnostic module, each bus interface receptacle communicatively coupled to a computer system bus;

a mass storage interface communicatively coupled to the computer system bus, the mass storage interface configured to transfer collected network diagnostic data to a mass storage device;

a trigger input port communicatively coupled to the computer system bus, the trigger input port configured to receive trigger signals indicating the occurrence of an event;

a trigger output port communicatively coupled to the computer system bus, the trigger output port configured to send trigger signals indicating the occurrence of an event;

at least one interconnect port communicatively coupled to the computer system bus, the at least one interconnect port configured to exchange network diagnostic control signals with one or more other chassis computer systems;

a remote access port communicatively coupled to the computer system bus, the remote access port configured to provide a remote computer system with an interface to resources of the chassis computer system; and

one or more programmable logic modules, each programmable logic module configured to process first bit files that cause the programmable logic module and at least one communicatively coupled port to interoperate to implement a first one of a plurality of different network diagnostic functions, the first one of the plurality of different network diagnostic functions being selected from among at least a network analyzer, a jammer, a generator, and a bit error rate tester, each programmable logic module including a clock configured to coordinate the transfer of data between the programmable

logic module and the at least one communicatively coupled port and wherein each programmable logic module is further configured to process second bit files that cause the programmable logic module and at least one communicatively coupled port to interoperate to implement a second one of the plurality of different network diagnostic functions, the second one of the plurality of different network diagnostic functions being selected from among at least a network analyzer, a jammer, a generator, and a bit error rate tester, wherein the second one of the plurality of network diagnostic components is different from the first one of the plurality of different network diagnostic functions.

13.   **(Original)**   The chassis computer system as recited in claim 12, wherein the one or more bus interface receptacles comprise at least one PCI bus interface receptacle.

14.   **(Original)**   The chassis computer system as recited in claim 12, wherein the mass storage interface comprises a SCSI interface.

15.   **(Original)**   The chassis computer system as recited in claim 12, wherein the trigger input port comprises a trigger input port configured to receive a TTL signal.

16.   **(Original)**   The chassis computer system as recited in claim 12, wherein the trigger output port comprises a trigger output port configured to send a TTL signal.

17.   **(Original)**   The chassis computer system as recited in claim 12, wherein the at least one interconnect port comprises at least one port configured to receive an RJ-45 connector.

18.   **(Original)**   The chassis computer system as recited in claim 12, wherein the remote access port comprises a port configured to receive a connection to a network that includes the remote computer system.

19.   **(Previously Presented)**   The chassis computer system as recited in claim 12, further comprising:

a bus interface configured to exchange data with the computer system bus;

one or more test ports, each test port communicatively coupled to one of the one or more programmable logic modules, each test port being network connectable to a test network; and

a control module communicatively coupled to the bus interface and communicatively coupled to each of the one or more programmable logic modules, the control module configured to coordinate the transfer of data between the bus interface and the one or more programmable logic modules.

20. **(Currently Amended)** In a computer system, a method for configuring a network diagnostic module, the method comprising the acts of:

receiving an indication that the network diagnostic module is to be configured to perform a first selected network diagnostic function;

receiving a first bit file for implementing the first selected network diagnostic function at one or more ports, the one or more ports interfacing with the network;

identifying a reconfigurable programmable logic module that controls the one or more ports;

loading at least a portion of the received first bit file at the identified reconfigurable programmable logic module to cause the one or more ports to be configured to perform the first selected network diagnostic function;

receiving an indication that the network diagnostic module is to be configured to perform a second selected network diagnostic function;

receiving a second bit file for implementing the second selected network diagnostic function at one or more ports, the one or more ports interfacing with the network; and

loading at least a portion of the received second bit file at the identified reconfigurable programmable logic module to cause the one or more ports to be configured to perform the second selected network diagnostic function, wherein the second selected network diagnostic function is different from the first selected network diagnostic function, the first and second one of the selected network diagnostic functions being selected from among at least a network analyzer, a jammer, a generator, and a bit error rate tester.

21. **(Previously Presented)** The method as recited in claim 20, wherein the act of receiving an indication that the network diagnostic module is to be configured to perform the

first or second selected network diagnostic function comprises an act of receiving user-input at an input device coupled to the computer system or a remote computer system.

22. **(Previously Presented)** The method as recited in claim 20, wherein the act of receiving a first or second bit file comprises an act of receiving a first or second bit file containing instructions that, when loaded at a programmable logic module, cause the programmable logic module and the one or more ports to interoperate to implement the first or second selected network diagnostic function.

23. **(Previously Presented)** The method as recited in claim 20, wherein the act of receiving a first or second bit file comprises an act of receiving a first or second bit file containing circuit design data that, when loaded at a programmable logic module, cause the programmable logic module and the one or more ports to interoperate to implement the first or second selected network diagnostic function.

24. **(Previously Presented)** The method as recited in claim 20, wherein the act of receiving a first or second bit file comprises an act of receiving a first or second bit file for implementing a port personality.

25. **(Previously Presented)** The method as recited in claim 20, wherein the act of identifying a programmable logic module that controls the one or more ports comprises an act of utilizing addressing information associated with the first or second bit file to identify[[ing]] a programmable logic module.

26. **(Previously Presented)** The method as recited in claim 20, wherein the act of loading at least a portion of the received second bit file at the identified programmable logic module comprises an act of reconfiguring the one or more ports from being configured to perform the first selected network diagnostics function to being configured to perform the second selected network diagnostic function.

27. **(Previously Presented)** The method as recited in claim 20, wherein the act of loading at least a portion the received first or second bit file at the identified programmable logic module comprises an act of loading a portion of the first or second bit file for implementing a network analyzer.

28. **(Previously Presented)** The method as recited in claim 20, wherein the act of loading at least a portion of the received first or second bit file at the identified programmable logic module comprises an act of a loading a portion of the first or second bit file for implementing a jammer.

29. **(Previously Presented)** The method as recited in claim 20, wherein the act of loading the at least a portion of the received first or second bit file at the identified programmable logic module comprises an act of loading instructions or circuit design data for implementing a generator.

30. **(Previously Presented)** The method as recited in claim 20, wherein the act of loading the at least a portion of the first or second bit file at the identified programmable logic module comprises an act of loading a portion of the first or second bit file for implementing a bit error rate tester.

31. **(Previously Presented)** The method as recited in claim 20, wherein the act of loading the at least a portion of the first or second bit file at the identified programmable logic module comprises an act of loading instructions that cause the one or more ports to be configured to perform the first or second selected network diagnostic function.

32. **(Previously Presented)** The method as recited in claim 20, wherein the act of loading the at least a portion of the first or second bit file at the identified programmable logic module comprises an act of loading circuit data that causes the one or more ports to be configured to perform the first or second selected network diagnostic function.

33.   **(Previously Presented)**   The method as recited in claim 20, further comprising:

an act of transferring network diagnostic data through the one or more ports in accordance with the first or second selected network diagnostic function.

34. **(Currently Amended)** A computer program product comprising one or more computer-readable media having stored thereon computer executable instructions that, when executed by a processor, cause the computer system to perform the following:

receive an indication that a network diagnostic module is to be configured to perform first and second selected network diagnostic functions;

receive a first bit file for implementing the first selected network diagnostic function at one or more ports and receive a second bit file for implementing the second selected network diagnostic function at the one or more ports, the one or more ports interfacing with the network;

identifying a reconfigurable programmable logic module that controls the one or more ports;

loading at least a portion of the first received bit file at the identified reconfigurable programmable logic module to cause the one or more ports to be configured to perform the first selected network diagnostic function; and

loading at least a portion of the second received bit file at the identified reconfigurable programmable logic module to cause the one or more ports to be configured to perform the second selected network diagnostic function, wherein the second selected network diagnostic function is different from the first selected network diagnostic function, the first and second one of the selected network diagnostic functions being selected from among at least a network analyzer, a jammer, a generator, and a bit error rate tester.

35. **(Original)** The computer program product as recited in claim 34, wherein the one or more computer-readable media comprise physical storage media.

36. **(Original)** The computer program product as recited in claim 34, wherein the one or more computer-readable media comprise system memory.

37.   **(Currently Amended)**   A network diagnostic module configured to:

receive a first bit file, the first bit file including instructions or data for implementing a first selected network diagnostic function at one or more ports, the first selected network diagnostic function selected from among a plurality of different network diagnostic functions that can be implemented at the network diagnostic module, the one or more ports interfacing with a network;

identify a reconfigurable programmable logic module that controls the one or more ports; and

load the included instructions or data at the identified reconfigurable programmable logic module to cause the reconfigurable programmable logic module and the one or more ports to interoperate to implement the first selected network diagnostic function, wherein the reconfigurable programmable logic module and the one or more ports are configured to interoperate to implement a second selected network diagnostic function upon receipt and loading of instructions or data of a second bit file, wherein the second selected network diagnostic function is different from the first selected network diagnostic function, the first and second one of the selected network diagnostic functions being selected from among at least a network analyzer, a jammer, a generator, and a bit error rate tester..